POSTER

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Demographic Profile of a Community Based Cohort with Stress Induced Cardiomyopathy

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Background: The profile of patients with stress induced cardiomyopathy in the community remains poorly defined. Most reports are from case series at tertiary referral centers. We report characteristics of patients with this rare cardiomyopathy from a large population based cohort.
Methods: Cases were identified from a network of 6 medical centers in a large prepaid health plan between November 2005 and April 2010. Cases were confirmed if: (1) there was left ventricular dysfunction in greater than one coronary artery distribution, (2) without obstructive coronary artery disease, (3) recovery of left ventricular function. Data on patient demographics, stress factors, co-morbidities, medications, pertinent lab values, ECG findings on admission and discharge, angiographic findings, follow up left ventricular assessment and deaths were collected.
Results: The mean age was 67.6 ± 11 years, and 97% were female. Mean ejection fraction on admission was 0.42 ± 0.08 and 0.60 ± 0.07 at follow-up. There were 50 patients who had hypertension (78%), 28 had a history of smoking (44%) with 8 active smokers (12.5 %), 44 had dyslipidemia (69%), 25 had depression (39%), 23 had gastroesophageal reflux (36%), 16 had diabetes (25%), and 15 had hypothyroidism (23%). Eight patients (12%) presented with ST-segment elevation myocardial infarction with 2 receiving thrombolytics. Admission ECG showed a QT interval of 486 ± 51 ms and 474 ± 41 ms on discharge. Two patients (3%) had ventricular fibrillation on admission. The mean troponin I peak value (using the same assay for all patients) was 2.8 ng/mL. Angiographic findings included presence of a right dominant circulation in 50 patients (78%), a "wrap-around" LAD artery in 55 patients (86%), and evidence of mitral regurgitation in 13 patients (20%). Only 36 (56%) had the typical apical ballooning pattern, while 44% had an apical sparing pattern. Follow up showed 5 patients (8%) received an ICD device, 2 patients (3%) had a recurrent episode of stress induced cardiomyopathy and 1 patient died in the hospital due to cardiogenic shock.
Conclusions: In our series we found stress induced cardiomyopathy to be more prevalent in elderly females. Patients had only minor troponin I elevations. Hypertension, smoking, depression, GERD, and hypothyroidism were common comorbidities. The QTc was prolonged at admission and discharge. Angiographically, a "wrap-around" LAD was a common finding with apical ballooning being the most common manifestation of the LV dysfunction. Recurrent episodes were observed; however, the incidence was low.

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What is Optimal Revascularization Strategy in Patients with Multivessel Coronary Artery Disease in Non-ST-Elevation Myocardial Infarction? - Multivessel or Culprit-only Revascularization

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Background: In patients with non-ST-elevation myocardial infarction (NSTEMI), current guidelines did not recommend optimal revascularization management in multivessel coronary artery disease. We compared clinical outcomes between multivessel revascularization and culprit-only revascularization in this setting.
Methods: A total of 1,919 patients with multivessel disease (1,011 patients; multivessel revascularization group, 908 patients; culprit-only revascularization group) diagnosed as NSTEMI was enrolled in a nationwide prospective Korea Acute Myocardial Infarction Registry (KAMIR) from November 2005 to January 2008. The primary end points were major adverse cardiac events (MACE), all-causes of deaths, myocardial infarction (MI), and repeated percutaneous coronary intervention (PCI) during 1-year clinical follow-up.
Results: Baseline clinical characteristics and the risk factors of coronary artery disease were similar between both groups. However, in-hospital mortality was higher in culprit-only group (1.4% vs. 2.9%, p=0.025). Primary end-points occurred in 241 patients (15.5%) during 1-year follow-up. Multivessel revascularization reduced MACEs [hazard ratio (HR) 0.658, 95% confidence interval (CI) 0.45 to 0.96, p=0.031], death or myocardial infarction (HR 0.58, 95% CI 0.35 to 0.97, p=0.037) and non-target vessel revascularization (HR 0.44, 95% CI 0.24 to 0.81, p=0.008). There were no significant differences in target lesion revascularization (TLR; HR 1.38, 95% CI 0.51 to 3.71, p=0.529) and target vessel revascularization (TVR; HR 0.28, 95% CI 0.05 to 1.47, p=0.131).
Conclusion: multivessel revascularization in multivessel coronary artery disease presenting with NSTEMI showed better clinical outcomes without significant in-stent restenosis and progression of diseased-vessel compared to culprit-only revascularization.

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The BCIS-1 Myocardial Jeopardy Score Predicts Mortality After Percutaneous Coronary Intervention

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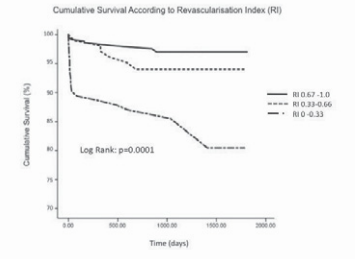
Background: Current angiographic coronary disease scores do not allow classification of patients with CABG (e.g. SYNTAX) or left main (LM) disease (e.g. Duke Jeopardy Score). Moreover they can be difficult to use and are of unclear prognostic utility. The recently described BCIS-1 myocardial Jeopardy Score (JS) overcomes these limitations but lacks prognostic validation.
Methods: Blinded observers reviewed coronary angiograms from 607 patients who had PCI in a single UK Center between 2005 and 2008. Selection was random but weighted 1 CABG: 3 non-CABG. JS pre and post PCI and a Revascularization Index (RI) were calculated. RI=(JS_{pre} -JS_{post})/JS_{pre} with 1 indicating complete revascularization. The outcome measure was all-cause mortality, tracked via the national mortality database. Predictors of outcome were assessed by univariate and multivariate analyses.
Results: Patient characteristics: mean age 66 ± 11 years, mean follow-up 2.6 ± 1.1 years, male 76%, acute case 45%, left ventricular (LV) impairment 39%, diabetes 20%, renal failure 5%, CABG 26% and LM disease 12%.
There were 37 deaths. Survival was significantly worse in patients with JS 10-12 versus those with JS 0-4 and 6-8 at baseline and also in patients with RI 0-0.33 versus those with RI 0.34-0.66 and 0.67-1.0 (fig). JS pre and post PCI predicted mortality on univariate analysis. RI was a strong predictor of mortality on univariate analysis and an independent predictor in a multiple regression model incorporating age, LV function, acuity of presentation, renal failure, CABG and shock; RI 0-0.33 HR 1.8; 95% CI 1.2-2.8; p=0.009.

	Univariate analysis		Multivariate analysis	
	Hazard Ratio (95%CI)	p value	Hazard Ratio (95% CI)	p value
Revascularisation Index (0-0.33)	2.49 (1.67-3.70)	0.0001	**1.8 (1.16-2.81)**	**0.009**
BCIS-1 JS pre PCI	2.20 (1.34-3.62)	0.002	1.14 (0.65-2.02)	0.65
BCIS-1 JS post PCI	3.98 (2.33-6.78)	0.0001	1.78 (0.93-3.39)	0.08
LV impairment	3.33 (2.16-5.16)	0.0001	1.63 (0.94-2.81)	0.08
Age>65	1.05 (1.02-1.09)	0.0001	**1.05 (1.01-1.10)**	**0.01**
Renal failure	6.00 (2.58-13.94)	0.0001	**4.08 (1.59-10.47)**	**0.003**
Acute coronary syndrome	2.78 (1.35-5.73)	0.005	1.59 (0.70-3.64)	0.27
Cardiogenic shock	15 (6.17-36.46)	0.0001	2.75 (0.56-13.59)	0.21
Previous CABG	2.79 (1.41-5.53)	0.003	1.63 (0.73-3.65)	0.24



Conclusions: The BCIS-1 JS and RI predict outcome in patients undergoing contemporary PCI. Higher RI is associated with significantly improved survival suggesting that complete anatomical revascularization may improve prognosis and that BCIS-1 JS might usefully guide PCI.

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Utility of Magnetic Navigation for the Percutaneous Treatment of Complex Coronary Artery Lesions: Outcomes and Learning Curve

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Background: The use of magnetic navigation systems (MNS) has been limited to a few major centers because of cost and a lack of clear advantage over conventional percutaneous coronary intervention (PCI). We performed a retrospective analysis to determine whether the use of MNS improved procedural success for highly complex lesions including those that had previously failed revascularization with conventional PCI.
Methods: 148 patients had undergone treatment of 164 lesions with MNS (Stereotaxis, St. Louis, Missouri) at Mayo Clinic. ACC/AHA criteria for a "Type C" lesion complexity was present in 103 lesions. These included 18 cases where previous attempts at PCI had failed and 25 cases that had a chronic total occlusion of a major epicardial artery. Clinical data, angiographic and procedural characteristics, lesion crossing success and outcomes were reviewed. Individual success rates for 14 interventional cardiologists with varying levels of MNS utilization were also reviewed to assess for a learning curve.
Results: Overall 139 patients underwent successful revascularization with 91% (149) of 164 lesions crossed using either MNS guidance alone (143 lesions), or MNS assisted by wire support devices such as Tornus (Abbott Laboratories, Abbott Park, Illinois) or Venture (St. Jude Medical, St. Paul, Minnesota) catheters (6 lesions). 18 highly complex lesions had previously failed PCI on one or more occasion and 12 (67%) were treated successfully using MNS. MNS lesion crossing success after failed PCI was 88% for regular users of MNS (performing >20 MNS cases/year) and 30% for infrequent users (performing <5 cases/year). Twenty-five chronic total occlusions were treated, with antegrade MNS revascularization success rates of 89% (16/18) for regular and 29% (2/7) for infrequent users.
Conclusions: MNS had utility in the performance of highly complex PCI and could overcome failure to cross with conventional wires in 12 out of 18 cases. The regular utilization of MNS technology resulted in a higher proportion of procedural success for the most complex lesion subsets, thereby indicating the presence of a learning curve.

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Comparison of Same Sitting, Robotic Assisted Hybrid Coronary Artery Revascularization with Off-Pump Coronary Artery Bypass Surgery in Multi-vessel Coronary Artery Disease

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Objective: Hybrid Coronary Artery Revascularization (HCR) is a relatively novel procedure incorporating surgical (CABG) and percutaneous coronary intervention (PCI) in patients with multi-vessel CAD. Although there is some data on staged HCR, separated by days or weeks, the data on same-sitting HCR is meager.
Methods: We conducted a single center, prospective analysis comparing same sitting, robotic assisted HCR patients (n=18) to a group of consecutive, off-pump CABG (OPCAB) patients (Syntax score ≤ 60, n=26) during similar time period. HCR underwent robotic LIMA takedown (Intuitive Surgical, Inc) followed by off-pump bypass of LAD (+/- diagonal) via mini-anterior thoracotomy. After confirming LIMA patency by angiography, immediate PCI on the non-bypass arteries was then performed.